

CLAIMS

1. An apparatus for registering a mobile node operating in a visited network,
2 comprising:

3 a memory element; and

4 a processor configured to execute a set of instructions stored within the
5 memory element, the set of instructions for:

6 performing an initial registration with a foreign agent in the visited
7 network;

8 if an IP packet is transferred within a predetermined time period,
9 then following a standard protocol;

10 if an IP packet is note transferred within the predetermined time
11 period, then refraining from performing a re-registration with the foreign
12 agent, wherein refraining from performing the re-registration is contrary to
13 the standard protocol; and

14 if an IP packet is transferred after the predetermined time
15 period expires and before the registration lifetime expires, then
16 transmitting a re-registration request.

2. An apparatus for re-registering a mobile node with a foreign agent,
2 comprising:

3 a memory element; and

4 a processor configured to execute a set of instructions stored within the
5 memory element, the set of instructions for:

6 performing a registration with the foreign agent wherein a
7 registration lifetime is set;

8 refraining from performing a re-registration if a pre-determined
9 period, which is less than the registration lifetime, has expired and no
10 packet has been transmitted or received at the mobile node; and

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12 performing a re-registration only if a packet is transmitted or received after a successful registration and before the expiration of the registration lifetime

3. An apparatus for registering a mobile node operating in a visited network,
2 comprising:

registration means for performing an initial registration and subsequent
4 re-registrations of the mobile node with a foreign agent in the visited network;
and

6 timing means for use with the registration means, wherein the registration
means uses the timing means to determine whether to follow a standard
8 protocol or to disregard the standard protocol, wherein disregarding the
standard protocol is to refrain from performing the re-registration of the mobile
10 node.

4. A method for re-registering a mobile node with a foreign agent,
2 comprising:

performing an initial registration with a foreign agent in the visited network;

if an IP packet is transferred between the mobile node and the foreign agent within a predetermined time period, then following a standard protocol;

if an IP packet is not transferred within the predetermined time period,
8 then refraining from performing a re-registration with the foreign agent, wherein
refraining from performing the re-registration is contrary to the standard
10 protocol; and

if an IP packet is transferred after the predetermined time period and
12 before the expiration of a registration lifetime, then transmitting a re-registration
request.

5. A method for minimizing the impact of registration requests from a
2 travelling mobile node, comprising:

performing initial registration with the foreign agent wherein a lifetime is set;

- refraining from performing a re-registration if a pre-determined period,
- 6 which is less than the registration lifetime, has expired and no packet has been transmitted or received; and
- 8 performing a re-registration only if a packet is transmitted or received after the expiration of the pre-determined period and before the expiration of the
- 10 registration lifetime.

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